

Response to Final Office Action Mailed October 2, 2001

A. Claims In The Case

Claims 95-101, 103-105, 141-152, 156, 157, 159-165, 167-169, 171-182, 186, and 187 have been rejected. Claims 160, 162, 172-177 have been canceled without prejudice. Claims 95 and 159 have been amended. Claims 95-106, 141-152, 154-159, 161, 163-171, 178-182 and 184-188 are pending.

B. The Claims Are Not Obvious Over Buazza In View Of Baskerville Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 95-99, 103-106, 147-150, and 156 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,415,816 to Buazza et al. (hereinafter "Buazza'816") in view of U.S. Patent No. 4,576,766 to Baskerville et al. (hereinafter "Baskerville"). Applicant respectfully disagrees with these rejections.

In order to reject a claim as obvious, the Examiner has the burden of establishing a *prima facie* case of obviousness. *In re Warner et al.*, 379 F.2d 1011, 154 USPQ 173, 177-178 (C.C.P.A. 1967) To establish a *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP § 2143.03.

Applicant's amended independent claim 95 is directed to a system that includes:

a lens forming composition adapted to be disposed within the mold cavity during use, comprising:

a monomer that cures by exposure to activating light to form the eyeglass lens during use;

an ultraviolet light absorbing compound that substantially absorbs light having a wavelength in a first range during use, wherein the ultraviolet light absorbing compound increases the absorption of ultraviolet light by the formed eyeglass lens;

a photoinitiator that initiates curing of the monomer in response to being exposed to activating light having a wavelength in a second range during use

The Examiner states:

Buazza et al. fail to teach the lens forming composition to comprise a light absorbing compound that substantially absorbs light. Buazza et al. further fail to teach the light absorbing compound to comprise a photochromic compound.
(Office Action page 5)

To remedy these deficiencies the Examiner cites Baskerville. Specifically, the Examiner states:

Baskerville et al. teaches a lens-forming composition comprising a light absorbing photochromic compound for the purpose of producing a lens which block UV light.
(Office Action, page 5)

Applicant respectfully disagrees with the Examiner with regard to the teachings of Baskerville. Applicant's claims are directed to a system that includes a lens forming composition. The lens forming composition includes an ultraviolet light absorbing compound. The lens forming composition is a composition that may be placed in a mold assembly and cured to form an eyeglass lens. Applicant's specification described ultraviolet light absorbing compounds, stating:

Materials (hereinafter referred to as "ultraviolet absorbing compounds") that absorb various degrees of ultraviolet light may be used in an eyeglass lens to

inhibit ultraviolet light from being transmitted through the eyeglass lens. Such an eyeglass lens advantageously inhibits ultraviolet light from being transmitted to the eye of a user wearing the lens. Thus eyeglass lenses containing ultraviolet absorbing compounds may function to protect the eyes of a person from damaging ultraviolet light. Photochromic pigments are one type of ultraviolet absorbing compounds.

(Specification, page 117, l. 4-10)

Applicant submits that the claimed system includes lens forming compositions that include compounds that absorb ultraviolet light in the formed eyeglass lens.

Baskerville, however, does not appear to teach the use of a lens forming composition that includes ultraviolet light absorbing compounds. Instead, Baskerville appears to teach the use of ultraviolet light absorbing compound precursors that are subsequently converted to ultraviolet light absorbing compounds. Baskerville describes the formation of eyeglass lenses that include "heliochromic" compounds. Baskerville states:

Compounds which are heliochromic are defined as compounds possessing the combination of properties considered essential for photoreactive lenses, namely (a) a high quantum efficiency for colouring in ultraviolet light (b) a low quantum efficiency for bleaching with white light and (c) fast thermal fade at ambient temperatures, but not so rapid that the combination of white light bleaching and thermal fade prevent colouring by the ultra-violet component of strong sunlight.
(Baskerville, col. 2, lines 15-32)

Baskerville then teaches the use of a precursor that is converted into a "heliochromic" compound after a lens forming composition is cured. For example, Baskerville states:

It has now been found that the fulgides and fulgimides which are the precursors of the heliochromic compounds described in the Heller et al application can be incorporated into the material from which a plastic article is to be formed prior to

forming the article and then converted in situ into a substance which confers heliochromic properties on the plastic article.
(Baskerville, col. 2, lines 38-44)

The method used to form the article determines the method used to convert the precursor to the sunlight reactive form.
(Baskerville, col. 3, lines 20-23)

In the case of cast materials the precursor may not be converted in situ into a heliochromic compound at the temperatures prevailing during the curing cycle. In the case of CR39 it is necessary to operate a curing temperature under 100 °C and a substantially colourless or slightly yellow article is generally produced which can be rendered heliochromic by a post-treatment, e.g. irradiation from a UV source.
(Baskerville, col. 3, lines 12-20)

In the case of an article made from the material sold by P.P.G. Ltd. under trade name CR39, the precursor can be incorporated into the monomer prior to casting the article. The conversion to the coloured form is then carried out after curing the cast lens.
(Baskerville, col. 3, lines 25-29)

Applicant submits that Baskerville does not appear to teach or suggest the use of an ultraviolet light absorbing compound in a lens forming composition, but rather, appears to teach the use of an ultraviolet light absorbing compound precursor. As such, Applicant submits that Baskerville in combination with Buazza does not appear to teach or suggest all of the features of claim 95.

Amended claim 159 is directed to a system that includes:

a lens forming composition configured to be disposed within the mold cavity during use, comprising:

a monomer that is curable in the mold cavity by exposure to activating light to substantially form the eyeglass lens

a photochromic compound that absorbs at least a portion of the activating light in a first range during at least a portion of the curing of the monomer; and

a photoinitiator that activates a co-initiator after being exposed to at least a portion of activating light in a second range during curing, wherein the co-initiator activates curing of the monomer to form the eyeglass lens and wherein the co-initiator facilitates curing of the lens forming composition;

Applicant submits that, for at least the same reasons cited above for claim 95, the features of claim 159 are neither taught nor suggested by the combination of Buazza and Baskerville.

C. The Claims Are Not Obvious Over Buazza '816 In View Of Baskerville And In Further View of Costanza Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 100 and 151-152 under 35 U.S.C. § 103(a) as being unpatentable over Buazza '816 in view of Baskerville as applied to claims 95-99, 103-105, 147-150 and 156 above, and in further view of U.S. Patent No. 4,077,858 to Costanza et al. (hereinafter "Costanza"). Applicant respectfully disagrees with these rejections.

Applicant submits that claims 100 and 151-152, for at least the reasons set forth above, are patentable over the cited art.

D. The Claims Are Not Obvious Over Buazza '816 In View Of Baskerville And In Further View of Portney Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 101 and 157 under 35 U.S.C. § 103(a) as being unpatentable over Buazza '816 modified by Baskerville et al. as applied to claim 95-99, 103-105, 147-150, and 156 above, and in further view of U.S. Patent No. 4,842,782 to Portney et al. (hereinafter "Portney"). Applicant respectfully disagrees with these rejections.

Applicant submits that claims 101 and 157, for at least the reasons set forth above for, are patentable over the cited art.

E. The Claims Are Not Obvious Over Buazza '816 In View Of Baskerville And In Further View of Tarshiani Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 141-142, 144-145, 159-163, 167-169, 171-172, 174-175, 177-180, and 186 under 35 U.S.C. § 103(a) as being unpatentable over Buazza '816 in view of Baskerville and in further view of U.S. Patent No. 5,422,046 to Tarshiani et al. (hereinafter "Tarshiani"). Applicant respectfully disagrees with these rejections.

Applicant submits that claims 141-142 and 144-145 for at least the reasons set forth, are patentable over the cited art.

F. The Claims Are Not Obvious Over Buazza '816 In View Of Baskerville And In Further View of Buazza '575 Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 141-145, 159-163, 167-169, 171-175, 177-180, and 186 under 35 U.S.C. § 103(a) as being unpatentable over Buazza '816 modified by Baskerville as applied to claims 95-99, 103-105, 147-150, and 156 above, and further in view of U.S. Patent No. 5,928,575 to Buazza (hereinafter "Buazza '575"). Applicant respectfully disagrees with these rejections.

Applicant submits that claims 141-145, 159-163, 167-169, 171-175, 177-180 and 186, for at least the reasons set forth above, are patentable over the cited art.

G. The Claims Are Not Obvious Over Buazza In View Of Baskerville And Tarshiani And In Further View of Coughanowr Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 146 and 176 under 35 U.S.C. § 103(a) as being unpatentable over Buazza '816 in view of Baskerville and Tarshiani and in further view of Coughanowr et al. (Process Systems Analysis and Control: 111-121 (1965); hereinafter "Coughanowr").

Applicant submits that claims 146 and 176, for at least the reasons set forth above are patentable over the cited art.

H. The Claims Are Not Obvious Over Buazza In View Of Baskerville And Tarshiani And In Further View of Costanza Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 164 and 181-182 under 35 U.S.C. § 103(a) as being unpatentable over Buazza '816 in view of Baskerville and Tarshiani as applied to claims 95-99, 103-105, 141-142, 144, 148-150, 156, 159-163, 167-169, 171-172, 174, 177-180 and 186 above, and further in view of Costanza et al. ("Costanza"). Applicant respectfully disagrees with these rejections.

Applicant submits claims 164 and 181-182, for at least the reasons set forth above, are patentable over the cited art.

I. The Claims Are Not Obvious Over Buazza In View Of Baskerville And Tarshiani And In Further View of Portney Pursuant to 35 U.S.C. § 103(a)

The Examiner rejected claims 165, and 187 under 35 U.S.C. § 103(a) as being unpatentable over Buazza '816 modified by Baskerville and Tarshiani as applied to claims 95-99, 103-105, 141-142, 144, 147-150, 156, 159-163, 167-169, 171-172, 174, 177-180 and 186 above, and further in view Portney. Applicant respectfully disagrees with these rejections.

Applicant submits that claims 165 and 187, for at least the reasons set forth above, are patentable over the cited art.

J. Many Of The Dependent Claims Are Separately Patentable

The Examiner is also respectfully requested to separately consider each of the dependent claims for patentability. Many of the dependent claims in addition to those mentioned above are independently patentable.

For instance, claim 96 recites in part, "activating light is directed in a plurality of pulses toward at least one of the first and second mold members." The features of claim 96, in combination with the features of independent claim 95 do not appear to be taught or suggested by the prior art.

Claim 97 recites in part, "a second light generator adapted to generate and direct a pulse of activating light toward the second mold member." The features of claim 97, in combination with the features of independent claim 95 do not appear to be taught or suggested by the prior art.

Claim 98 recites in part, "a controller adapted to control the first and second light generators such that activating light is directed in a plurality of pulses toward the first and second mold members." The features of claim 98, in combination with the features of independent claim 95 do not appear to be taught or suggested by the prior art.

Claim 99 recites in part, "the first light generator is adapted to generate and direct activating light pulses with a sufficiently high intensity such that the photoinitiator forms a first polymer chain radical." The features of claim 99, in combination with the features of

independent claim 95 do not appear to be taught or suggested by the prior art.

Claim 160 recites in part, "light is directed in a plurality of pulses toward at least one of the first and second mold members." The features of claim 160, in combination with the features of independent claim 159 do not appear to be taught or suggested by the prior art.

Claim 162 recites in part, "the controller configured to control the first and second light generators such that light is directed in a plurality of pulses toward the first and second mold members." The features of claim 162, in combination with the features of independent claim 159 do not appear to be taught or suggested by the prior art.

Claim 163 recites in part, "the first light generator is configured to generate and direct activating light pulses with a sufficiently high intensity such that the photoinitiator forms a first polymer chain radical." The features of claim 163, in combination with the features of independent claim 159 do not appear to be taught or suggested by the prior art.

K. Summary

Based on the above, Applicant submits that all claims are in condition for allowance. Favorable reconsideration is respectfully requested.

Buazza
09/395,894

Applicant respectfully requests a two-month extension of time to respond to the Office Action mailed October 2, 2001. A fee authorization form is enclosed to cover this extension of time fee. If any further extension of time is required, Applicant hereby requests the appropriate extension of time. If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley, Rose & Tayon, P.C. Deposit Account Number 50-1505/5040-03206/EBM

Respectfully submitted,



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Strikethrough Version of the Amended Paragraphs

Ultraviolet photoinitiators which have utility in the present invention may include: 1-hydroxycyclohexylphenyl ketone commercially available from Ciba Additives under the trade name of Irgacure 184; mixtures of bis(2,6-dimethoxybenzoyl) (2,4,4-trimethyl-phenyl-pentyl) phosphine oxide and 2-hydroxy-2-methyl-1-phenyl-propan-1-one commercially available from Ciba Additives under the trade name of Irgacure 1700; mixtures of bis(2,6-dimethoxybenzoyl) (2,4,4 trimethyl-phenyl-pentyl) phosphine oxide and 1-hydroxycyclohexylphenyl ketone commercially available from Ciba Additives under the trade names of Irgacure 1800 and Irgacure 1850; 2,2-dimethoxy-2-phenyl acetophenone commercially available from Ciba Additives under the trade name of Irgacure 651; 2-hydroxy-2-methyl-1-phenyl-propan-1-one commercially available from Ciba Additives under the trade names of Darocur 1173; mixtures of 2,4,6-trimethylbenzoyl-diphenylphosphine oxide and 2-hydroxy-2-methyl-1-phenyl-propan-1-one commercially available from Ciba Additives under the trade name of Darocur 4265; 2,2-diethoxyacetophenone (DEAP) commercially available from First Chemical Corporation of Pascagoula, Mississippi, benzil dimethyl ketal commercially available from Sartomer Company under the trade name of KB-1; alpha hydroxy ketone commercially available from Sartomer company under the trade name of Esacure KIP100F; 2-methyl thioxanthone (MTX), 2-chloro thioxanthone (CTX), thioxanthone (TX), and xanthone, all commercially available from Aldrich Chemical; 2-isopropyl thioxanthone (ITX) commercially available from Aceto Chemical in Flushing, New York; mixtures of triaryl sulfonium hexafluoroantimonate and propylene carbonate commercially available from Sartomer Company under the trade names of SarCat CD 1010, SarCat 1011, and SarCat KI85; diaryl iodonium hexafluoroantimonate commercially available from Sartomer Company under the trade name of SarCat CD-1012; mixtures of benzophenone and 1-hydroxycyclohexylphenyl ketone commercially available from Ciba Additives under the trade name of Irgacure 500; 2-benzyl-2-N,N-dimethylamino-1-(4-morpholinophenyl)-1-butanone commercially available from Ciba Additives under the trade name of Irgacure 369; 2-methyl-1-[4-(methylthio)phenyl]-2-morpholino propan-1-one

commercially available from Ciba Additives under the trade name of Irgacure 907; bis(n5-2,4-cyclopentadien-1yl)-bis-[2,6-difluoro-3-(1H-pyrrol-1-yl) phenyl] titanium commercially available from Ciba Additives under the trade name of Irgacure 784 DC; mixtures of 2,4,6-trimethyl benzophenone and 4-methylbenzophenone commercially available from Sartomer Company under the trade name of EsaCure TZT; and benzoyl peroxide and methyl benzoyl formate both available from Aldrich Chemical in Milwaukee, Wisconsin.

A preferred ultraviolet photoinitiator is bis (2,6 dimethoxybenzoyl) (2,4,4 trimethyl phenylpentyl) phosphine oxide, commercially available from Ciba Additives in Tarrytown, New York under the trade name of CGI-819. The amount of CGI-819 present in a lens forming composition containing photochromic compounds preferably ranges from about 30 ppm by weight to about 2000 ppm by weight.

Strike-though Version of the Amended Claims

95. (Amended) A system for making an ophthalmic eyeglass lens, comprising:

a first mold member having a casting face and a non-casting face;

a second mold member having a casting face and a non-casting face, the second mold member being adapted to be spaced apart from the first mold member during use such that the casting faces of the first mold member and the second mold member at least partially define a mold cavity;

a lens forming composition adapted to be disposed within the mold cavity during use, comprising:

a monomer that cures by exposure to activating light to form the eyeglass lens during use;

an ultraviolet light absorbing compound that substantially absorbs light having a wavelength in a first range during use, wherein the ultraviolet light absorbing compound increases the absorption of ultraviolet light by the formed eyeglass lens;

a photoinitiator that initiates curing of the monomer in response to being exposed to activating light having a wavelength in a second range during use;
and

a first light generator adapted to generate and direct activating light at a wavelength in the second range toward at least one of the mold members to cure the lens forming composition and to form the eyeglass lens during use.

159. (Amended) A system for making an ophthalmic eyeglass lens, comprising:

a first mold member having a casting face and a non-casting face;

a second mold member having a casting face and a non-casting face, the second mold member being configured to be spaced apart from the first mold member during use such that the casting faces of the first mold member and the second mold member at least partially define a mold cavity;

a lens forming composition configured to be disposed within the mold cavity during use, comprising:

a monomer that is curable in the mold cavity by exposure to activating light to substantially form the eyeglass lens

a ~~light absorbing~~ photochromic compound that absorbs at least a portion of the activating light in a first range during at least a portion of the curing of the monomer; and

a photoinitiator that activates a co-initiator after being exposed to at least a portion of activating light in a second range during curing, wherein the co-initiator activates curing of the monomer to form the eyeglass lens and wherein the co-initiator facilitates curing of the lens forming composition; and

a first light generator configured to generate and direct activating light at a wavelength in the second range toward at least one of the mold members to cure the lens forming composition and to form the eyeglass lens during use; ~~and~~

~~a controller coupled to the first light generator, wherein the controller adjusts a dose of initiating light reaching the cavity as a function of the temperature of the lens forming composition during use.~~